

SESSION V

TIME: Wednesday 10 May, 3:30-5:00

ROOM: Elizabethan Room A

TRACK: Inland and Deep Draft Navigation

TOPIC: Innovative Analytical Procedures and Tools

MODERATOR: Ken Claseman, Mobile District

PRESENTATIONS:

Title: RiverPass: Towards an Intelligent Inland Waterway Transport System

Presenters: Anne Sudar, Institute for Water Resources; Doug McDonald, Institute for Water Resources.

Abstract: The Waterborne Commerce unit of the Navigation Data Center currently collects information on traffic and cargo moving through the inland waterway system with paper forms, called VORs. RiverPass will eliminate these tedious, slow, and error-prone paper forms. It will enable electronic, remote capture of waterborne commerce data and lock performance monitoring data, thus saving time and money.

Tracking with geographic positioning systems is already used in rail, truck, and air transport modes. This technology could easily be applied to the water mode. Fast, accurate availability of waterborne commerce and traffic information would increase the competitiveness of inland waterway shippers and carriers and facilitate incorporation of inland waterway transport into inter-modal supply chains. The industry could use it to plan voyages and calculate more reliable time schedules. Based on the current and expected positioning data of the various vessels that are underway in the network, lock and terminal operators can calculate and communicate expected times of arrival to tugboat operators. Tugboat operators can then adjust speeds, if necessary, and reduce waiting times at locks. This would optimize use of existing infrastructure as well as lower fuel consumption. RiverPass could also communicate real-time information on changing river conditions to operators. They can use this information to determine safe barge loads, and to take advantage of available channel depths and to reduce incidents and injuries.

Title: Use of Scenarios: Future Traffic Demand Forecast Scenarios Based on Environmental Emission

Presenter: David Weekly, LRH

Abstract: The Great Lakes and Ohio River Division, over a number of years, has pursued continual refinement in the development of the waterway traffic forecasts used in project economic analyses. The latest effort involved the development of five alternative forecast scenarios involving principally utility steam coal. Two of these scenarios are based on extensive surveys of utility companies and the use of this information in the Ohio River System utility coal model. The final three are based on the work of Hill and Associates Management Consultants and involve evaluations, in a linear programming context, of the coal market effects of alternative environmental laws and regulations. The first two scenarios, termed the Utility-Based and Utility-Based High scenarios, are founded on the input of utility company users of the Ohio River System. The input of the electric utilities, which includes short-term consumption, generation and transportation forecasts is input to the ORS utility coal model to generate future flows over the forecast horizon. The Utility-Based scenario reflects the traffic impact of baseline level of economic growth while the Utility-Based High scenario reflects high economic growth. The final

three scenarios are based on the Hill and Associates work. Hill and Associates prepares 20-year steam coal forecasts based on the interaction of two major linear programming models, the National Power Model and the Utility Fuel Economics Model. The National Power Model is a utility industry model that dispatches all electric generating plants in the U.S. (both coal and non-coal), producing forecasts of generation by fuel type within a context of transmission and environmental constraints. The Utility Fuel Economics Model makes use of highly-detailed coal supply data (for approximately 98 coal types) to allocate fuels among plants and units. These two models developed forecasts of coal demand, by type of coal, for electric generation, which were then “mapped” to the waterway. Hill and Associates prepared separate forecast scenarios based on three alternative environmental regulatory futures. The first of these represents a continuation of existing law, which in this case was the National Ambient Air Quality Standards. The second Hill and Associates scenario reflects implementation of the administration’s Clear Skies Initiative. The final Hill and Associates scenario is implementation of the Clear Skies Initiative without the proposal’s severe mercury restrictions.

Title: Engineering Reliability Analysis: Component Degradation Functions and Event Trees to Forecast the Structural Performance of Major Lock Components

Presenter: Virgil Langdon, Jr. (Buddy), Huntington District

Abstract: As inland navigation projects age maintenance requirements tend to increase. The median age of the 238 lock chambers in the U.S. is 51 years and with this aging infrastructure, and an ever increasing Operation & Maintenance backlog, lock equipment failures are increasing. As the different components of a lock chamber degrade, the question becomes if and when they should be replaced, and under a budget constraint, which maintenance should have funding priority. For some components the most economical policy might be to schedule and replace the component before an unscheduled failure occurs, while for other components, the consequence of a failure might be so inconsequential and / or infrequent that the most economical policy is to repair if and when a failure occurs. The consequences of an unscheduled failure include both a Federal repair expenditure and the transportation impact resulting from the service disruption, and will vary by navigation project and component. Risk-based analysis offers a quantification method to integrate engineering reliability data with economic consequences over a life-cycle to prioritize lock maintenance. Since the 1993 Marmet Feasibility report LRD (then ORH) has been utilizing engineering hazard functions and failure event consequence trees in their analysis, however, each new study demands more analysis detail and the permutations of investment / maintenance options that effect future scheduled cyclical maintenance needs complicates the analysis. The current analysis techniques allows for automated investment optimization.

Title: Interagency Collaboration and Ecological Modeling for the Sabine-Neches Waterway Feasibility Study

Presenter: Janelle Stokes, Galveston District

Abstract: This paper will describe a collaborative interagency and interstate team approach that was used to evaluate ecological effects of the proposed deepening and widening of the Sabine-Neches Waterway (SNWW) in Texas and Louisiana. The SNWW study area contains over 450 square miles of significant coastal wetland habitat and concern over potential impacts of a deeper navigation channel has been high. An Interagency Coordination Team comprised of fourteen federal and state resource agencies from Louisiana and Texas was directly involved in evaluating project impacts and benefits through the application of the Wetlands Value Assessment (WVA) community model. The presentation will describe the WVA model methodology and its application to the SNWW study.

SESSION V

TIME: Wednesday 10 May, 3:30-5:00

ROOM: California West

TRACK: Ecosystem Restoration

TOPIC: Challenges in Formulation

MODERATOR: Amy Frantz, Huntington District

PRESENTATIONS:

Title: How Many Fish Equal A Tree?

Presenter: Robert L. Browning II, Albuquerque District

Abstract: Economic analysis can evaluate the impacts of constraints in formulating ecosystem restoration projects. My involvement in the Albuquerque BioPark Sec. 1135 study began with the question, "How many fish equal a tree?" The thought at the time was there's a limited supply of water and the team will need to determine an efficient allocation of water for an aquatic habitat and a wetland habitat. During the course of the study, it was clear that, though fish and trees didn't have to compete for the same water (the final design provided trees water as a positive externality of watering the aquatic habitat), the economist can add value to the formulation of the NER plan by evaluating the impacts of natural constraints (available acreage, water inflow rates) and policy constraints (available water rights) when developing management measures for a restoration project.

This presentation will discuss the development and analysis of management features used to generate an aquatic habitat and three types of wetland habitat, the use of IWR-PLAN and limitations encountered, team involvement challenges and lessons learned.

Title: Everglades Restoration: Incremental Justification of a Comprehensive Plan - Policy Issues and Technical Procedures

Presenter: Eric Bush, Jacksonville District

Abstract: The Comprehensive Everglades Restoration Plan (CERP) consists of 68 separate components, which have been combined into multiple projects to be implemented over a 40-year implementation period. The CERP was approved by Congress in the Water Resources Development Act of 2000 as a "framework" for the restoration of the South Florida ecosystem. WRDA 2000 also established certain project implementation requirements.

The CERP Programmatic Regulations (33 CFR Part 385) enacted in 2003 further established project implementation principles, including the requirement that "(i)ndividual projects shall be formulated, evaluated, and justified based on their ability to contribute to the goals and purposes of the Plan and on their ability to provide benefits that justify costs on a next-added increment basis (emphasis added). The regulations define the term "next-added increment" as "the next project to be added to a system of projects that includes only those projects that have been approved and likely to have been implemented" and established a requirement that program-wide guidance be developed, including "instructions for formulation and evaluation of alternatives developed for Project Implementation Reports, their cost effectiveness, and impacts," including the process for evaluating the project as the next-added increment of the CERP.

This presentation will describe lessons learned from applying the basic investment concept of "cost justified by benefits" to watershed-scale restoration planning for the Everglades ecosystem,

technical procedures that have been developed to satisfy legal requirements and meet standards of public and scientific acceptability, and compliance challenges associated with applying technical procedures to federal and USACE planning policy requirements.

**Title: Integration of A Large-Scale General Investigation Ecosystem
Restoration Projects Within A Regional Planning Framework**

Presenter: Jeffrey F. Dillon, Seattle District

Abstract: The Puget Sound Nearshore restoration project (PSNER) is a General Investigation Feasibility Study initiated by the U.S. Army Corps of Engineers in 2000. Its purpose is to restore nearshore health to degraded areas along Washington's 2,300-mile long Puget Sound coastline. The Corps along with its local sponsor, the Washington State Department of Fish and Wildlife, have worked closely to develop an integrated approach to addressing the nearshore needs of Puget Sound. This presentation will focus on project organization, the regional ecosystem restoration environment and specifically, the inter-agency relationships between scientists, academia, professionals and local partners that provide direction to the project team. The PSNER Team has been actively engaged in regional salmon recovery efforts, technical document preparation and regional funding programs that help keep the project relevant and program results acceptable to the sponsor. PSNER's integration into regional efforts has garnered early success and attention; helping the Corps leverage limited resources and respond to large scale ecosystem damage where ecosystem restoration may rely on a diverse set of solutions operating at multiple scales.

**Title: Measuring Ecosystem Restoration Benefits for Fish Passage/Dam
Removal Projects – Review of Existing Projects**

Presenter: Jodi Staebell, Rock Island District

Abstract: Key factors in quantifying ecosystem restoration benefits for fish passage/dam removal projects include: (1) quantity of habitat with restored connectivity, (2) quality of habitat upstream of the dam, (3) efficiency of each alternative (including no action) at passing the target species, and (4) habitat trade-offs.

Methods used to estimate ecosystem benefits for fish passage/dam removal projects in the Midwest and northeast were evaluated. Projects were compared and contrasted based on the four factors above. Quality of reconnected stream habitat can be measured using habitat suitability indices for target species, the Qualitative Habitat Evaluation Index, biotic indices, or best professional judgment. Benefit evaluations should consider differences in passage efficiency among the no action, fishway, fish bypass channel and dam removal alternatives. Various strategies were used to estimate passage efficiency. The loss of wetland and lake habitat resulting from dam removal alternatives was quantified. Use of net benefits (riverine habitat benefits – wetland/lake habitat losses) to conduct cost effectiveness-incremental cost analyses (CE-ICA) could bias results against selection of the dam removal as a recommended plan. Trade-off analysis may best be conducted outside of CE-ICA.

SESSION V

TIME: Wednesday 10 May, 3:30-5:00

ROOM: Elizabethan Room B

TRACK: Flood & Coastal Storm Damage Reduction

TOPIC: Innovations in Flood Damage Reduction Planning

MODERATOR: Boni Bigornia, South Pacific Division

PRESENTATIONS:

Title: **A View from the Bluff: Wetland Mitigation and the Historic Viewshed at the Finderne Farm Site, Somerset County, New Jersey**
Presenter: **Kirsten Smyth, New York District, Nancy Brighton, New York District; Lynn Rakos, New York District; Megan Grubb, New York District**

Abstract: Accomplishing wetland mitigation within the developed areas of New York and New Jersey is a challenge, not only in terms of locating available land, but working with multiple interests and site constraints. The New York District's Finderne Wetland Mitigation Project in Somerset County, New Jersey, which is part of the Green Brook Flood Control Project, has successfully transitioned from planning and design into construction due to continuous and diligent team collaboration and coordination with involved stakeholders. The mitigation plan evolved through the efforts and input of multiple federal, state and local agencies, private interests, and utility companies. The design that emerged from the collaboration process addresses the habitat mitigation needs, easement holdings, incorporated park recreation features, and unique historic and archaeological features of the site. Not all site limitations can be known up front, but with an interdisciplinary perspective, unforeseen constraints can cultivate into positive attributes of the project. For the Finderne Project, the determination of an onsite historic viewshed and Native American archeological site at first seemed like a significant obstacles, but with team participation and flexibility, the preservation of these features was incorporated into the plan without diminishing the wildlife habitat areas to be provided.

Title: **Formulation of a Multiple-Purpose Plan for the Truckee River, Nevada**
Presenters: **Scott Miner, Sacramento District; Jerry Fuentes, Sacramento District**

Abstract: A study is being conducted to reformulate the authorized Truckee Meadows flood damage reduction project on the Truckee River. Three distinct reaches of the river are being addressed. In the upstream reach through downtown Reno, single purpose flood damage reduction is being considered. In the middle reach through Truckee Meadows, a combined plan for flood damage reduction and ecosystem restoration is being developed. And in the downstream rural reach of the study area, single purpose ecosystem restoration is being evaluated, along with limited separable flood damage reduction features. Because the three reaches are functionally separable, a different type of plan formulation is being used in each of the reaches: NED in the upper reach, combined NED/NER in the middle reach, and separate NER and NED in the lower reach. Results of the plan formulation process to date will be presented, with an emphasis on the trade-off analysis for the formulation of a combined plan for the middle reach.

Title: Integrating Tribal Coordination into the Planning Process: The Pyramid Lake Paiute Tribe and the Truckee Meadows Flood Control Project

Presenter: David Bauman, Sacramento District

Abstract: The Corps recognizes that tribal governments are sovereign entities, with rights to manage tribal resources, and be involved in Federal decisions which may affect these resources. The objectives of the Truckee Meadows Project are to reduce Truckee River flood damages in the Reno-Sparks area and to perform ecosystem restoration along the Truckee River from Reno to Pyramid Lake. The project has the potential to improve riparian and aquatic habitat along the Truckee River within the boundaries of the Pyramid Lake Paiute Reservation. The Pyramid Lake Paiute Tribe (PLPT) has a direct interest in the project, and is especially concerned about any Federal action that may affect tribal fisheries.

Vital to the Corps' planning process is the establishment of good working relationships with stakeholders. The Corps and the PLPT have an established relationship dating back as least 20 years, and the Corps has sought and received tribal input into the most recent phase of the Truckee Meadows Project since 1997. The Truckee Meadows Project is ongoing. Historically, the interaction between the Corps and the PLPT has been mutually beneficial, but there is still more work to be done to establish and maintain a government-to-government relationship with the PLPT.

Title: Planner Lessons Learned and Sculpting the Post Authorization Planning Process on the American River Folsom Dam Modifications Project

Presenter: Tom Adams, Sacramento District

Abstract: As a result of the recent significant increase in the estimated construction cost for the American River Folsom Dam Modifications Project, the Corps initiated and completed an After Action Report (AAR) on this project, seeking lessons learned which are applicable in the future to our civil works project development process. In addition, given the potential for significant project construction delays in a significant flood risk area, the Corps' has also developed and applied a project specific policy for 'value management' documentation to support the required Post Authorization Change for this project, which may result in a significant time savings for the completion of the project design and construction activities. The Corps is collaborating with the US Bureau of Reclamation on a plan to resolve dam safety issues as well as flood damage reduction.

This presentation covers some of the more interesting aspects of the Planners' role in the post authorization project development process and consultation for the AAR. It also covers the remedies developed to meet a time constrained construction target date and will discuss identified areas where USACE policies may need adjustment to better meet the intent of Congress under certain situations. The collaboration with Reclamation and challenges of resolving an integrated plan with Corps planning policy will be part of the discussion.

SESSION V

TIME: Wednesday 10 May, 3:30-5:00

ROOM: Elizabethan Room C

TRACK: Watershed/System Assessment

TOPIC: Case Studies in Regional & Collaborative Planning

MODERATOR: Sam Arrowood, Southwestern Division

PRESENTATIONS:

Title: Improving Collaboration, Coordination and Communications on a Regional Level: The North Georgia Water Resources Agencies (NWGRA)

Presenter: Dean Trawick, Mobile District

Abstract: Over the years, many county, state, and federal agencies (including the Corps), developed a reputation for planning water resource projects without soliciting input from “other interested resource agencies”. The Mobile – Savannah Planning Center recognized the need to improve the collaboration, coordination, and communication for the Metropolitan North Georgia region and formed a central interdisciplinary team, the North Georgia Watershed Team (NGWT). The immediate challenge facing this team was to identify and include all stakeholders in the process of formulating acceptable solutions for the many General Investigation Studies and Continuing Authority Projects in this large urbanized region of Georgia. The NGWT organized an interagency collaborative working group, the North Georgia Water Resource Agencies (NGWRA). This group has been very successful in working to develop a regional ecosystem response model and is beginning to look at project alternative development. The NGWRA consists of approximately 30 members from six different state and federal agencies and two counties (non-Federal sponsors). The attendance of project sponsors is critical as they bring special focus to local considerations before the entire working group. Workshops are held quarterly to assure timely information exchange and the formulation of truly acceptable and executable watershed level solutions.

Title: International Joint Commission (US-Canada) Lake Ontario-St. Lawrence River (LOSLR) Study: Applying Corps Principles for Collaborative Integrated Planning

Presenter: Eugene Z. Stakhiv, Institute for Water Resources

Abstract: There are numerous permutations of watershed/river basin management approaches, mostly dependent on the institutional setting of the basin. There is significant recent momentum towards grassroots watershed management organizations that, in the absence of a dominant institution, attempt to coordinate the programs, relying on bottom-up public participation and NGO involvement, of the various fragmented water management institutions in a given basin (regulatory agencies, planning commissions, development agencies, municipalities, counties, etc.). Each has its merits and transferable lessons that could be added to the “toolkit” of future approaches to integrated water resources management and sustainable development. The recently completed LOSLR study represents a more traditional approach, relying on a long functioning institution, the International Joint Commission (IJC), to develop a binding solution to an important subset of continuously evolving or emergent problems of the basin. The IJC deals with many different problems of the Great Lakes (water diversions and export, system operations, navigation improvements, water quality, invasive species, etc.) through a focused and partitioned approach. However, the fact that the IJC is coordinating all these separable actions and study

boards, both within its multidimensional jurisdiction, as well as with all the federal, state, provincial and local entities, ensures a fair amount of cohesiveness and integration of the respective implementation actions. Much of the progress and advances in water management occurs when existing institutions with implementation authority undertake water management initiatives. One of the unique aspects of the study is that the Study Board of 14 members (equally representation of US and Canada, including Native Americans and Aborigines) is an **independent body** that provides its recommendations to the IJC. The IJC also has engaged a 24-member, independent Public Interest Advisory Group (PIAG), which assists the Board with public outreach, involvement and advice (over 250 meetings throughout the basin). The Study Board organized 10 Technical Working Groups, which engages over 150 scientists, engineers, ecologists and economists from academia and federal, state and local agencies to undertake the scores of studies, extensive primary data collection, and development of state-of-the art models for evaluation and decision-making that are required to provides answers to the basic issues.

Title: Collaboration for Integrated Management of the Upper Mississippi River System

Presenters: Charles Spitzack, Rock Island District; Ken Barr, Rock Island District

Abstract: The Upper Mississippi River System (UMRS) encompasses the channel and floodplain areas and all the associated physical, chemical, and biological components. It includes 854 miles of the Mississippi River from Minneapolis, MN to Cairo, IL; 327 miles of the Illinois Waterway from Chicago to the Mississippi River at Grafton, IL; and the navigable portions of the Minnesota, St. Croix, and Kaskaskia Rivers. Five States see the UMRS as vital to their economy and quality of life of their people. Congress in the 1986 WRDA referred to the UMRS as a national ecological treasure as well as an efficient transportation system. Federal presence in the UMRS, especially through the Corps and Fish & Wildlife Service, is significant.

This presentation will be in three parts. The first is a quick overview of the UMRS in ecological, social, and economic terms. The second provides a historical perspective, dating back to the 1970's, on the evolution of the collaborative environment in the UMRS and the emergence of a shared vision. The third is on current efforts to advance the state of collaboration for the UMRS as a key component of integrated, adaptive management. This will touch on the process for change, the nature of the emerging institutions for collaboration, and the role of the Corps of Engineers.

Title: Implementing Partnering to Frame Regional Coastal Strategies

Presenters: Roselle Henn, New York District; Lisa Morales, Headquarters

Abstract: The Corps of Engineers strategic partnership with The Nature Conservancy (TNC) has led to many opportunities for collaboration on many levels across both organizations. In parallel with Headquarters' execution of the National Memorandum of Understanding (MOU), Districts within North Atlantic Division (NAD) have worked with local TNC Chapters to establish project specific agreements and local MOUs. A Regional MOU between NAD and TNC's Northeast Region (Maine to Virginia) was executed this fall to facilitate partnering on the regional and watershed scale. The first implementation of the Regional MOU will be the development of strategies to integrate TNC's Marine Assessment of the northeast coast with Corps storm damage reduction and estuary ecosystem restoration projects. Watershed planning and regional sediment management techniques provide the tools for this collaboration, however, policy issues relating to partnering with TNC and other Non-Governmental Organizations on large scale efforts continue to present challenges. Opportunities for advancing solutions to regional water resource management concerns in the northeast will be presented.

SESSION V

TIME: Wednesday 10 May, 3:30-5:00

ROOM: Elizabethan D

TRACK: Planning Community of Practice

TOPIC: Practitioner Perspectives on Collaboration

MODERATOR: Harry Kitch, Headquarters

PRESENTATIONS:

Title: **An Integrated Planning Model for Urban River Restoration Decision Making**

Presenters: **G. Edward Dickey, Ph.D., Affiliate Professor of Economics, Loyola College in Maryland and Leonard A. Shabman, Professor Emeritus, VPI, et al**

Abstract: In July of 2002, the USEPA and USACE entered into a Memorandum of Understanding (MOU) to implement the Urban River Restoration Initiative (URRI). The MOU, which has since been extended, was a first step in an interagency collaboration to develop plans for rejuvenating the nation's urban industrial rivers and helping revitalize surrounding communities.

One key to a successful collaborative planning process among agencies is the utilization of a common planning model. Collaboration means involving all agencies and stakeholders in every element of planning and decision making, including the definition of problems, the development and evaluation of alternative solutions and the identification of a preferred solution. For a successful planning process in a setting where several agency authorities and requirements need to be addressed, it is essential to first assure that the planning model is one that would be acceptable to all participating Federal agencies, as well as other agencies and stakeholders. Such a model must allow collaborators to develop a shared understanding of the nature and scope of problems and the merits of possible solutions.

The Principles and Guidelines (P&G) planning model used by the Corps must be joined to the planning processes of EPA and those of other agencies that deal with multiple stressors on urban rivers, for example. This presentation proposes an Integrated Planning Model that will meet the planning and decision making needs of URRI studies and other Corps collaborative planning efforts. The presentation will focus specifically on providing Corps planners with the insights and tools necessary to effectively bring its incremental analysis tools to planning contexts where many of the participants may view plan development as a standards-based decision process and have little or no appreciation of the Corps approach to plan development.

Title: **Implementation Issues that arise from Collaborative Projects**

Presenters: **Rebecca S. Griffith, Ph.D., Fort Worth District**

Abstract: Normally a planning process focuses on the "what" questions --what is the problem, what should be done, what project should be recommended. The current interest in and emphasis on the Corps' role in a collaborative planning environment does not change that. However, as we move into the implementation phase of projects that are collaboratively planned, and are envisioned for collaborative implementation, a special set of new issues arises. This paper will suggest that, in collaborative implementation, the "how" question requires extra thought

and careful attention during the planning phase. The Central City project in Fort Worth Texas will be used as a case study to illustrate issues, such as shared responsibility for NEPA compliance, division and assignment of mitigation responsibilities, synchronization of design, and consistency in real estate acquisition. Standard Corps policies, including the imperative for “stand alone” and “fully functional” projects, will also be addressed.

Title: Is Collaborative Planning Realistic with Multiple Jurisdictions – Local Sponsor Experience in Harris County, TX
Presenters: Steve Fitzgerald, P.E., Harris County Flood Control District

Abstract: Integrating water resources management both geographically and functionally is an excellent goal, but is it realistic considering the number of potential jurisdictions that could be involved? Collaborative planning is the means to accomplish true integration, but is it enough? Does the Corps planning process need to be changed to accommodate integrated water resources management? The Harris County Flood Control District, a local sponsor for flood damage reduction projects in Houston, Texas since 1937, has experience with several Corps projects that involve a few jurisdictions and multiple jurisdictions. These questions will be explored, as well as specific recommendations for accomplishing this noble goal.

Title: Assessments of Collaborative Planning Approaches Across the Corps and other Federal Agencies
Presenters: Darrell Nolton, IWR, Steven B. Pugh, Baltimore District and James L. Creighton, Ph.D., Creighton & Creighton, Inc.

Abstract: Stakeholders (Federal and Non-Federal) are increasingly involved in Corps Planning Studies. How can the Corps involve stakeholders and other interest groups in a positive, collaborative manner? We need to promote methods of enhancing Corps credibility and building mutual trust. In an effort to address these issues, our R&D efforts attempt to answer the following two questions. 1) How has collaboration and participatory involvement evolved across the Federal Sector? 2) How has the Corps of Engineers incorporated this approach in planning studies?

Across the Federal sector, we struggle with definitions and understanding what is meant by Collaborative Planning. It appears to be a continuum of participation ranging from: informing the public; listening to the public; collaborative problem-solving; and developing agreements. It incorporates Public Participation and Conflict Resolution. This contract report covers Key Laws going back to 1946, regulating or promoting public participation and dispute resolution. It provides a brief summary of selected agency policies regarding public participation and collaboration. The report is in draft form and is available from the Institute for Water Resources (IWR).

In a snap-shot look at Corps of Engineer practices in collaborative planning and participatory programs, the IWR has been developing case studies of examples where a collaborative planning approach has been utilized by Corps Districts to address complex water resources problems and develop holistic solutions. The purpose of these case studies is to develop lessons learned and to facilitate information exchange throughout the organization. These case studies were purposely selected to ensure coverage of a broad spectrum of mission areas and geographic regions. Each MSC was represented in the survey. Key questions asked were: 1) how to establish a collaborative framework, 2) how to maintain a collaborative atmosphere, and 3) how to achieve collaborative solutions to multi-faceted problems.